

JOINT INVESTIGATION REPORT

INCIDENT NO: 2471501 JIV report S/N: 1030147

(Note: As practicable as possible the JIR report is to be signed in the field by all the participating parties)

A. GENERAL INFORMATION:

1. Fountain Incident Number: 2471501 2. Type of incident* OIL SPILL
3. Name of Location 14" OKORDIA = RUMUEKPE PIPELINE
4. Name of nearest community IKATA 5. State: RIVERS 6. LGA ALHOANA EAST
7. Type of Production facility/Installation OIL PIPELINE
8. Asset owner/District THE SHELL PETROLEUM DEVELOPMENT COMPANY OF NIGERIA LIMITED (SPDC)/PIPELINE

B. INCIDENT INFORMATION:

9. Details of incident
a. Date Reported: 2ND OCT, 2019
b. Start date/time of investigation: 3RD OCT, 2019 / 1300HRS
c. Investigation End date: 4TH OCT, 2019 Actual investigation duration, days: TWO DAYS
d. Description of spill point environment
 Firm soil Loose soil Recently excavated area
 Under water Swampy Exposed pipe surface
 Well Platform (on Water) Drill Rig

Additional observations around the spill point:

NOT APPLICABLE

- e. Description of leak point (tick as applicable);
- | | | |
|--|---|--|
| <input type="checkbox"/> Drilled hole | <input type="checkbox"/> Hack saw cut | <input type="checkbox"/> Tear (_____) |
| <input type="checkbox"/> Complete Rupture | <input type="checkbox"/> Inward dent, | <input type="checkbox"/> Well head tampering |
| <input checked="" type="checkbox"/> Failed Weld-on illegal hot tap valve | <input type="checkbox"/> Failed Clamp, | <input type="checkbox"/> Missing Pipeline/Flowline |
| <input checked="" type="checkbox"/> Crude oil theft (illegal bunkering) point, | <input type="checkbox"/> Saver-pit over flow | <input type="checkbox"/> Third party tampering with Clamp |
| <input type="checkbox"/> Third party tampering with valve setting | <input type="checkbox"/> Bulging Outward | <input type="checkbox"/> Third party tampering with flange, |
| <input type="checkbox"/> Flare System/Bund wall failure | <input type="checkbox"/> Cold vent | <input type="checkbox"/> Surge vessel overflow, |
| <input type="checkbox"/> Valve Failure | <input type="checkbox"/> Relief valve failure | <input type="checkbox"/> Accidental 3 rd party equipment impact |
| <input type="checkbox"/> Others(specify) _____ | | |
- f. Incident caused by:
 Third party interference (Sabotage ; crude theft ; Line theft ; Accidental 3rd party damage
 Operational Others (including Mystery spills) _____

*This can be: a) Oil Spill b) Drilling fluid/Chemical c) Siltation d) construction e) Encroachment f) Fire, g) non leaking Theft point removal
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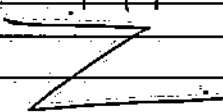
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g. Spill point coordinates

h. Measuring unit

WGS 84

Northing:	Easting:
5.03961	6.59449
	

C. RISK ASSESSMENT

10. Type of environment:

- Land
 Swamp
 Water
 Seasonal swamp
 Shoreline/Waterfront

i. Type of environment to which oil has spread:

- Land
 Swamp
 Water
 River (identify) _____

ii. Weather condition:

- Rain
 Sunny
 Dry
 Wet
 Windy
 Hot
 Cool

11. Distance to Sensitive habitat within 100m radius

- Government reserved and designated protected area
- Drinking water source
- Built up area
- Farmlands
- Fish Farm/Pond
- Fishing net
- Others (specify):

[] ,m) NONE SEEN
 [] ,m) WITHIN VICINITY
 [50 ,m)
 [] ,m) NONE SEEN
 [] ,m) WITHIN VICINITY

12. Containment measures put in place;

- Booms
 Trench
 Dyke
 Natural depression
 Pit
 None
 Others: _____

13. Any pictures or video coverage?

[N]

14. Further response/repair initiated as at the time of JIV?

[N]

If yes to item 14, give brief description:

REPAIR ACTIVITIES ONGOING

15. Was there any disruption to the investigation?

[N]

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If yes to item 15 give brief description:

NOT APPLICABLE

16. Was JIV delayed? [Y] [N]

If yes to item 16 give brief description: FLOODED RIGHT OF WAY (ACCESS)

D. TYPE/NUMBERS OF PROPERTIES, IF ANY, FOUND WITHIN THE AREA OF SPREAD OF OIL

17. Structures / Properties

S/N	Type of Structures	Description	Size	Number	Comments
NOT APPLICABLE					

18. Crops/Economic Trees

S/N	Type of crops	Young	Medium	Matured	Quantity	Comments
1	CASSAVA	YES	YES	→	MANY	IMPACTED
/						

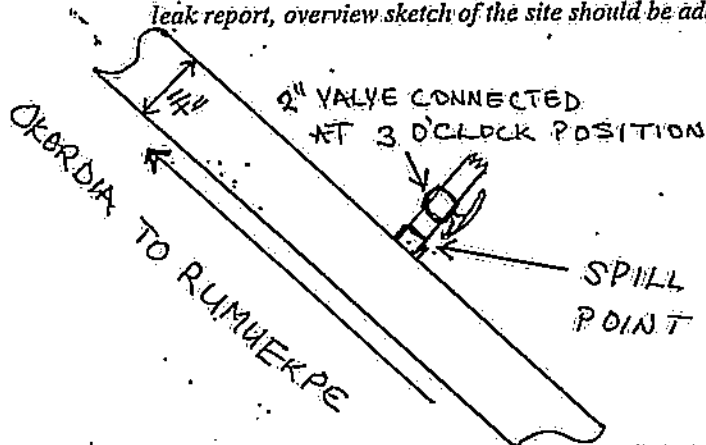
19. Fish/Nets/Ponds

S/N	Fish/Nets/Ponds	Description	Quantity/Size	Comments
NONE WITHIN AREA OF IMPACT				

20. Others (Specify) i.e. Animal Traps

S/N	Others	Description	Quantity/Size	Comments
NON WITHIN AREA OF IMPACT				

E. GRAPHIC DESCRIPTION OF LEAK POINT (while detail report of the leak point should be contained in the leak report, overview sketch of the site should be added as an appendix 1)



— RUMUEKPE PIPELINE AT IKATA SHOWING 2" VALVE CRUDE OIL THEFT POINT INSTALLED AT 3 O'CLOCK POSITION BY UNKNOWN PERSON(S)

COORDINATE LIST(14" OKORDIA-RUMUEKPE PIPELINE AT IKATA, INC.NO=2471501)

WGS 84

PTS	X(Eastings)	Y(Northing)	REMARKS
943	6.59449	5.03961	SPILL POINT
937	6.59443	5.03966	
940	6.59471	5.03963	
941	6.59469	5.03959	
942	6.5945	5.03966	
944	6.5945	5.03958	
945	6.59446	5.03958	
946	6.59441	5.03962	
947	6.59441	5.03967	
948	6.59419	5.03979	
949	6.59413	5.03982	
950	6.59418	5.03995	
951	6.59404	5.03987	
952	6.59393	5.03993	
953	6.59388	5.03999	
954	6.59378	5.04005	
955	6.5937	5.0401	
956	6.59365	5.03988	
957	6.59359	5.03973	
959	6.59391	5.04041	
960	6.59388	5.04046	
961	6.59388	5.0403	
962	6.59385	5.04013	
963	6.59393	5.04006	
964	6.59411	5.03997	
965	6.59426	5.03992	
966	6.59442	5.03979	
967	6.59454	5.03972	
968	6.59469	5.03964	
978	6.593337	5.039792	
979	6.593265	5.040046	
980	6.593313	5.040343	
981	6.593467	5.040584	
982	6.593724	5.040557	

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G. INCIDENT INFORMATION:

a. Impacted Area Details

- Total calculated area of impact 0.60 ha
- Impact within SPDC R.O.W. YES
- Impact outside SPDC R.O.W. YES

b. Volume of oil recovered before completion of JIV (V_{rec}):

Recovered oil V_{rec} :	<u>NIL</u>	Barrels
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Controlled recovery/evacuation from source with no impact to environment:

<u>NIL</u>	Barrels
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c. Net Estimated Spilled Volume V_{es} (bbls)* =

144.79 BARRELS

Estimated Reported Volume V_{re} (bbls) =**

145 BARRELS

***Notes:**

- Volume estimation was done using an excel based tool (see attached for details on the calculation)
- Reported spilled volume is an estimate

Write other relevant notes taken into consideration for volume estimation or cause of spill:

Calculation of the respective estimated volume is to be done on site as far as practicable using the new spill volume estimation software on site;

Conversion of m^3 to barrels is Volume (m^3) x 6.29; **Round up estimated volume to next whole number using the following rules:

• Any spill volume in excess of 1 bbl is rounded up to the next whole number.

• Any spill volume in less than 1 bbl is rounded up to the next 0.1 bbl.

Examples: Calculated volume = 15.3 bbl — Reported volume = 16 bbl
 Calculated volume = 0.35 bbl — Reported volume = 0.4 bbl
 Calculated volume = 0.01 bbl — Reported volume = 0.1 bbl.

Wherever this estimation tool is not applicable please refer to paragraph 6c (Deviations) of the JIV procedure to use appropriate steps for column estimation; record the calculation in a plain sheet of paper and attach to the JIV report.

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d. General Status of the site

- | |
|--|
| i. Joint investigation of the incident site found that there is no residual impact after the initial response and JIT therefore recommend that the site be closed out <input type="checkbox"/> |
| ii. Investigation of the incident site showed that there is residual impact on site requiring further works <input checked="" type="checkbox"/> |

e. Representatives

This report was filled, agreed and signed by the following joint investigation team representatives:

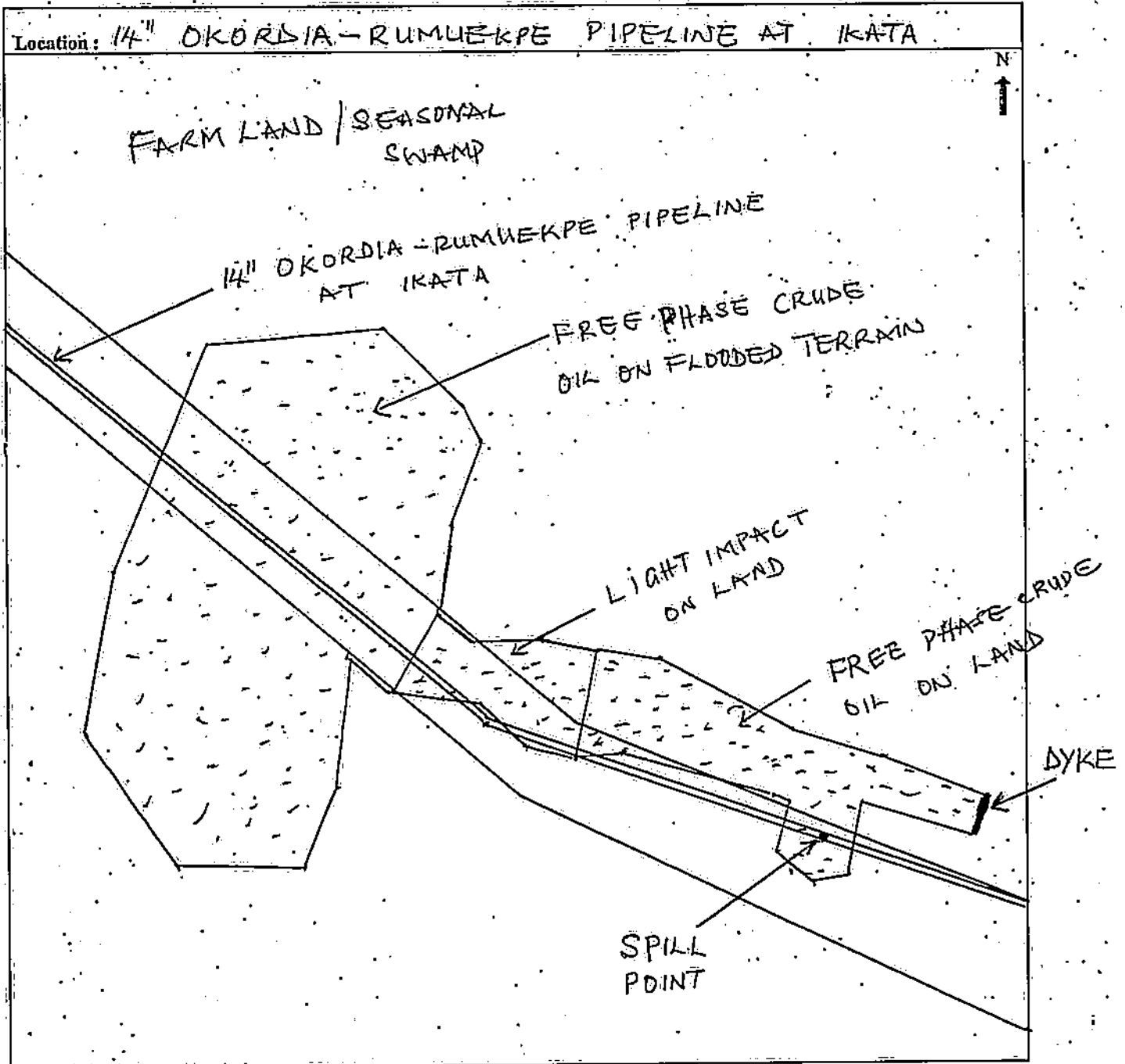
- Host Community:
- Department of Petroleum Resources (DPR):
- National Oil Spill Detection and Response Agency (NOSDRA):
- State Ministry of Environment (SME):
- Shell Petroleum Development Company (SPDC):
- *Separate DPR form has been filled out with same findings*

Tick as applicable

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f. Appendix 1: Overview sketch of the site



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